

*Craigavon Borough Council - Northern Ireland*

# Craigavon Borough Council



## 2009 Air Quality Updating and Screening Assessment for *Craigavon Borough Council*

In fulfillment of Part IV of the Environment Act 1995  
Local Air Quality Management

Date April 2009

*Craigavon Borough Council - Northern Ireland*

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<b>Report Reference number</b>	
<b>Date</b>	

## **Executive Summary**

Monitoring at 8 locations within Craigavon Borough Council's area has demonstrated that there are no NO<sub>2</sub> levels exceeding the objective limit of 40ug/m<sup>3</sup>. No other pollutants were assessed to have an impact on air quality within the borough at this time and therefore no AQMA or detailed assessments are required.

Craigavon Borough Council has not seen any significant changes from any pollution sources since the last round of review and assessment and no other sources of pollution have been identified. Therefore the likely impact from such sources is negligible.

Craigavon Borough Council has not identified the requirement for any proposed actions at this time as a result of information identified in this Updating and Screening Assessment. The next course of action to be taken by the council is to complete and submit a Progress Report in 2010.

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# **1 Introduction**

## **1.1 Description of Local Authority Area**

In 1995 the Environment Act provided for a national air quality strategy requiring local authorities to carry out reviews and assessments of the air quality in their area for seven specific pollutants which are; carbon monoxide (CO), benzene, 1,3-butadiene, nitrogen dioxide (NO<sub>2</sub>), lead, sulphur dioxide (SO<sub>2</sub>) and PM<sub>10</sub> (Particles under 10µm in diameter). Guidance on how to carry out the reviews and assessments was published by the Department of Environment, Food and Regions Affairs (DEFRA). The review and assessment procedure was divided into four stages. The first was an initial desk-top study to identify significant sources of pollution in areas where there are relative “receptors”. Where potential exceedences were identified the second stage was to include simple monitoring and modelling of the identified pollutants to identify whether there were likely to be exceedences of the air quality standards. Where such exceedences were thought likely, a stage three study required more detailed and complex modelling and monitoring of the relevant pollutants. Following the third stage, Local Authorities were expected to come to a conclusion about whether the air quality objectives would be achieved. If the air quality objectives were not met an Air Quality Management Area (AQMA) would have to be declared. Stage four studies were carried out where further investigation was required following the declaration of Air Quality Management Areas.

In Craigavon Borough Council’s area, the first stage of the review and assessment process was published in 2000 and identified two pollutants (NO<sub>2</sub> and SO<sub>2</sub>) with potential to result in an exceedence of the air quality standards, and thus a stage two study was carried out to assess them in more detail. The third stage report was appraised by the University of West England (UWE) on behalf of the Department of Environment’s Environment and Heritage Service (EHS), and accepted without any conditions. The conclusions reached in the Stage 2/3 Review and Assessment and the subsequent supplementary document, were that no further detailed assessments were required at that time for any of the pollutants reviewed and that there was currently no requirement for any statutory Air Quality Management Areas (AQMA’s) to be declared.

An Updating and Screening Assessment was completed by Craigavon Borough Council in 2006. The conclusions reached in the assessment, were that no further detailed assessments were required at that time for any of the pollutants reviewed and that there was currently no requirement for any statutory Air Quality Management Areas (AQMA’s) to be declared

Preparation of this Updating and Screening Assessment is the first activity prescribed in the timetable for the Third Round of reviews and assessments as set out in LAQM Policy Guidance LAQM TG(09). This report summarises the findings of the LAQM activities undertaken by the Council including the currently available air quality monitoring results for 2005.

## **1.2 Purpose of Report**

This report fulfils the requirements of the Local Air Quality Management process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedences are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

## **1.3 Air Quality Objectives**

The air quality objectives applicable to LAQM in **Northern Ireland** are set out in the Air Quality Regulations (Northern Ireland) 2003, Statutory Rules of Northern Ireland 2003, no. 342, and are shown in Table 1.1. This table shows the objectives in units of micrograms per cubic metre  $\mu\text{g}/\text{m}^3$  (milligrams per cubic metre,  $\text{mg}/\text{m}^3$  for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

**Craigavon Borough Council - Northern Ireland**

**Table 1.1 Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in Northern Ireland.**

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
<b>Benzene</b>	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	3.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2010
<b>1,3-Butadiene</b>	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
<b>Carbon monoxide</b>	10.0 $\text{mg}/\text{m}^3$	Running 8-hour mean	31.12.2003
<b>Lead</b>	0.5 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
	0.25 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2008
<b>Nitrogen dioxide</b>	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2005
<b>Particles (PM<sub>10</sub>) (gravimetric)</b>	50 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
<b>Sulphur dioxide</b>	350 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005



## **1.4 Summary of Previous Review and Assessments**

**Table 1.4-** Summary of Previous Review and Assessment Report completed by Craigavon Borough Council

<b>Report Type</b>	<b>Date</b>	<b>Exceedences</b>	<b>Detailed Assessment Required</b>	<b>AQMA's Declared</b>
Initial Review and Assessment	Jan 2001	None	No	None
Progress Report	Apr 2005	None	No	None
Updating & Screening Assessment	Apr 2006	None	No	None
Progress Report	Apr 2007	None	No	None
Progress Report	Apr 2008	None	No	None

## 2 New Monitoring Data

### 2.1 Summary of Monitoring Undertaken

#### 2.1.1 Automatic Monitoring Sites

There are no automatic monitoring sites within the Craigavon Borough Council area.

#### 2.1.2 Non-Automatic Monitoring

During 2008 Craigavon Borough Council carried out monitoring of NO<sub>2</sub> by diffusion tubes at eight sites within the Borough. The NO<sub>2</sub> diffusion tubes were prepared and analysed by Lambeth Scientific Services Limited. The tubes are prepared by coating the grids in a 50% v/v solution of the absorbent, triethanolamine (TEA) in Acetone. Analysis is carried out using a colorimetric technique.

None of the sites were co-located with an automatic NO<sub>2</sub> analyser. Details are given in Table 2.2.

**Table 2.2 Details of Non- Automatic Monitoring Sites**

Site Name	Site Type	OS Grid Ref	Pollutants Monitored	In AQMA ?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Worst-case Location ?
Union Street	Urban background	-	NO <sub>2</sub>	N	Y(15)	3m	Y
West Street	Roadside	-	NO <sub>2</sub>	N	Y(3)	3m	Y
Ardboe Drive	Urban Background	-	NO <sub>2</sub>	N	Y(<1)	15m	N
Ballyhannon Road	Urban Background	-	NO <sub>2</sub>	N	Y(4)	10m	N
Ashgrove Community Centre	Urban Background	-	NO <sub>2</sub>	N	Y(10)	10m	N
Castle Lane	Roadside	-	NO <sub>2</sub>	N	Y	2m	N
Lord Lurgan Park	Urban Background	-	NO <sub>2</sub>	N	Y(4)	15m	N
Cluandara	Roadside	-	NO <sub>2</sub>	N	Y(<1)	20	Y

Note: Distances from the kerb of the nearest road are representative of the distance from the nearest busy main road.

The bias factor being used to adjust the diffusion tube results is taken from the Review and Assessment website <http://www.uwe.ac.uk/aqm/review/R&Asupport/diffusiontube310309.xls>. The factor was generated using the spreadsheet and drop down menus from the site available for 2008. The council could have used a bias factor generated by co-location studies being carried out by two neighbouring councils. However, since those councils both use laboratories and diffusion tube suppliers it was deemed more prudent to use the bias factor from the Review and Assessment website.

Details of Lambeth Scientific Services WASP performance can be seen in Appendix B.

## **2.2 Comparison of Monitoring Results with AQ Objectives**

### **2.2.1 Nitrogen Dioxide**

None of the sites monitored in Craigavon recorded an NO<sub>2</sub> result above the objective limit of 40µg/m<sup>3</sup> during 2008.

Since Craigavon no longer completes automatic monitoring at any sites within the borough, there are no results available for the number of exceedences of the 1-hour mean or for the 99.8<sup>th</sup> percentile 1-hour means exceeding 200 µg/m<sup>3</sup>.

Details of Lambeth Scientific Services WASP can be found in Appendix B.

### **Automatic Monitoring Data**

Craigavon Borough Council has no automatic monitoring stations in its borough.

### **Diffusion Tube Monitoring Data**

Craigavon Borough Council monitors NO<sub>2</sub> pollution using diffusion tubes at 8 sites through the borough. These sites are located in Lurgan, Portadown and Craigavon. All of the tubes are positioned in accordance with the practical guidelines published by AEA Energy and Environment in a report to Defra and the Devolved Administrations.

**Table 2.4a Results of Nitrogen Dioxide Diffusion Tubes**

Site ID	Location	Within AQMA?	Data Capture 2008 %	Annual mean concentrations
				2008 (µg/m <sup>3</sup> ) Adjusted for bias
82760	Union Street	N	100	21
82979	West Street	N	100	22
82762	Ardboe Drive	N	100	13
82763	Ballyhannon Road	N	100	12
82764	Ashgrove Centre	N	92	15
82765	Castle Lane	N	100	18
82766	Lord Lurgan Park	N	92	13
82767	Cluandara, D'Macash	N	100	18

## Craigavon Borough Council - Northern Ireland

Table 2.4b Results of Nitrogen Dioxide Diffusion Tubes

Site ID	Location	Within AQMA?	Annual mean concentrations ( $\mu\text{g}/\text{m}^3$ ) Adjusted for bias		
			2006 *	2007 *	2008
82760	Union Street, Lurgan	N	16	20	21
82979	West Street	N	8	24	22
82762	Ardboe Drive	N	12	12	13
82763	Ballyhannon Road	N	15	12	12
82764	Ashgrove Centre	N	10	13	15
82765	Castle Lane	N	10	15	18
82766	Lord Lurgan Park	N	18	11	13
82767	Cluandara, D'Macash	N	11	20	18

### 2.2.2 PM<sub>10</sub>

Craigavon Borough Council does not have a monitoring programme for PM<sub>10</sub> at this time.

### 2.2.3 Sulphur Dioxide

Craigavon Borough Council does not carryout monitoring for Sulphur Dioxide at this time.

### 2.2.4 Benzene

Craigavon Borough Council does not carryout monitoring for Benzene at this time.

### 2.2.5 Other pollutants monitored

Not Applicable

### **3 Road Traffic Sources**

#### **3.1 Narrow Congested Streets with Residential Properties Close to the Kerb**

Craigavon Borough Council confirms that there are no new/newly identified congested streets with a flow above 5,000 vehicles per day and residential properties close to the kerb, that have not been adequately considered in previous rounds of Review and Assessment.

***DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.***

#### **3.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic**

Craigavon Borough Council confirms that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

***DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.***

#### **3.3 Roads with a High Flow of Buses and/or HGVs.**

Craigavon Borough Council confirms that there are no new/newly identified roads with high flows of buses/HDVs.

***DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.***

#### **3.4 Junctions**

Craigavon Borough Council confirms that there are no new/newly identified busy junctions/busy roads.

***DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.***

### **3.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment**

Craigavon Borough Council confirms that there are no new/proposed roads.

***DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.***

### **3.6 Roads with Significantly Changed Traffic Flows**

Craigavon Borough Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

***DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.***

### **3.7 Bus and Coach Stations**

Craigavon confirms that there are no relevant bus stations in the District.

***DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.***

## **4 Other Transport Sources**

### **4.1 Airports**

Craigavon Borough Council confirms that there are no airports in the District.

***DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.***

### **4.2 Railways (Diesel and Steam Trains)**

Craigavon Borough Council has two train stations within its Borough at Lurgan and Portadown. However neither of these stations have trains that are idling at the platforms for over 15 minutes.

#### **4.2.1 Stationary Trains**

Craigavon Borough Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

***DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.***

#### **4.2.2 Moving Trains**

Craigavon Borough Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

***DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.***

### **4.3 Ports (Shipping)**

Craigavon Borough Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

***DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.***

## 5 Industrial Sources

### 5.1 Industrial Installations

#### 5.1.1 New or Proposed Installations for which an Air Quality Assessment has been Carried Out

Craigavon Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

**DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.**

#### 5.1.2 Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced

Craigavon Borough Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

**DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.**

#### 5.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment

Craigavon Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

**DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.**

### 5.2 Major Fuel (Petrol) Storage Depots

*Delete whichever is not applicable:*

There are no major fuel (petrol) storage depots within the Local Authority area.

**DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.**

### 5.3 Petrol Stations

Craigavon Borough Council confirms that there are no petrol stations meeting the specified criteria.

**DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.**



## **5.4 Poultry Farms**

Craigavon Borough Council confirms that there are no poultry farms meeting the specified criteria.

***DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.***

## **6 Commercial and Domestic Sources**

### **6.1 Biomass Combustion – Individual Installations**

Craigavon Borough Council confirms that there are no biomass combustion plant in the District.

***DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.***

### **6.2 Biomass Combustion – Combined Impacts**

Craigavon Borough Council confirms that there are no biomass combustion plant in the District.

***DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.***

### **6.3 Domestic Solid-Fuel Burning**

Craigavon Borough Council confirms that there are no areas of significant domestic fuel use in the District.

***DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.***

## **7 Fugitive or Uncontrolled Sources**

Craigavon Borough Council confirms that there are no potential sources of fugitive particulate matter emissions in the District.

***DELETE BOX IF NOT APPLICABLE. OTHERWISE ADD LOCAL AUTHORITY NAME AND LEAVE IN.***

## **8 Conclusions and Proposed Actions**

Monitoring at 8 locations within Craigavon Borough Council's area has demonstrated that there are no NO<sub>2</sub> levels exceeding the objective limit of 40ug/m<sup>3</sup>. No other pollutants were assessed to have an impact on air quality within the borough at this time and therefore no AQMA or detailed assessments are required.

### **8.1 Conclusions from Assessment of Sources**

Craigavon Borough Council has not seen any significant changes from any pollution sources since the last round of review and assessment and no other sources of pollution have been identified. Therefore the likely impact from such sources is negligible.

### **8.2 Proposed Actions**

Craigavon Borough Council has not identified the requirement for any proposed actions at this time as a result of information identified in this Updating and Screening Assessment.

The next course of action to be taken by the council is to complete and submit a Progress Report in 2010.

## **9       References**

Local Air Quality Management Technical Guidance 2009 (Defra)

Local Air Quality Management Policy Guidance 2009 (Defra)

Diffusion Tubes for Ambient NO<sub>2</sub> Monitoring: Practical Guidance for Laboratories and Users – AEA Energy & Environment (Report to Defra and Devolved Administrations).



## **Appendices**

Appendix A: QA/QC Data

Appendix B: Lambeth Scientific Services WASP results

Appendix C: Diffusion Tube Monitoring Maps

## **Appendix A: QA:QC Data**

### **Diffusion Tube Bias Adjustment Factors**

During 2008 Craigavon Borough Council carried out monitoring of NO<sub>2</sub> by diffusion tubes at eight sites within the Borough. The NO<sub>2</sub> diffusion tubes were prepared and analysed by Lambeth Scientific Services Limited. The tubes are prepared by coating the grids in a 50% v/v solution of the absorbent, triethanolamine (TEA) in Acetone. Analysis is carried out using a colorimetric technique

### **Factor from Local Co-location Studies (if available)**

Craigavon Borough Council has no co-location sites within the borough

### **Discussion of Choice of Factor to Use**

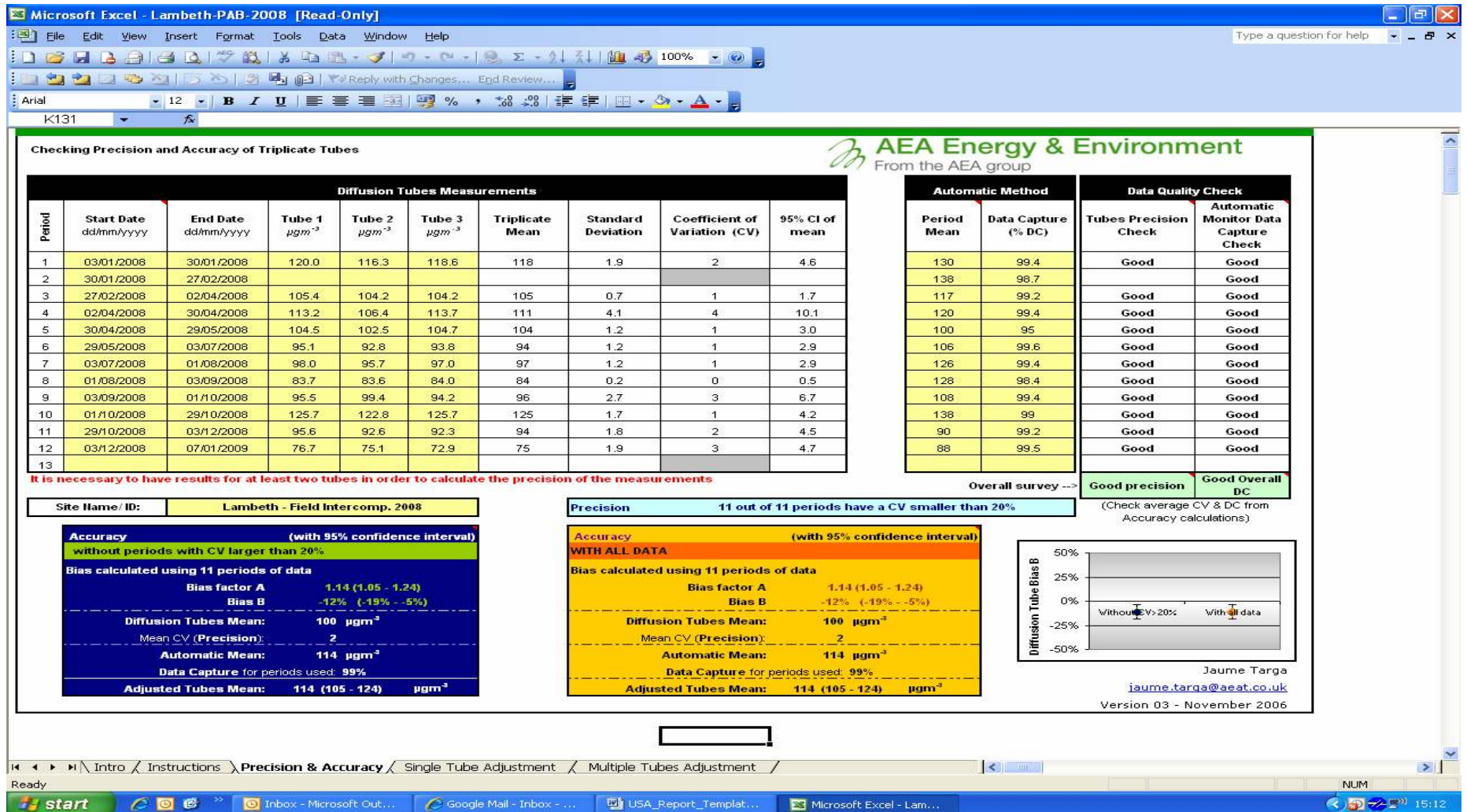
The bias factor being used to adjust the diffusion tube results is taken from the Review and Assessment website <http://www.uwe.ac.uk/aqm/review/R&Asupport/diffusiontube310309.xls>. The factor was generated using the spreadsheet and drop down menus from the site available for 2008. The council could have used a bias factor generated by co-location studies being carried out by two neighbouring councils. However, since those councils both use laboratories and diffusion tube suppliers it was deemed more prudent to use the bias factor from the Review and Assessment website.

### **QA/QC of diffusion tube monitoring**

See Appendix B below. WASP data provided by Fatima Rahman of Lambeth Scientific Services Limited in April 2009.



Appendix B: Lambeth Scientific Services WASP results





**Appendix C – Diffusion Tube Monitoring Maps**



# Air Monitoring Sites



Date: 13/05/2009 Scale: 1:1250



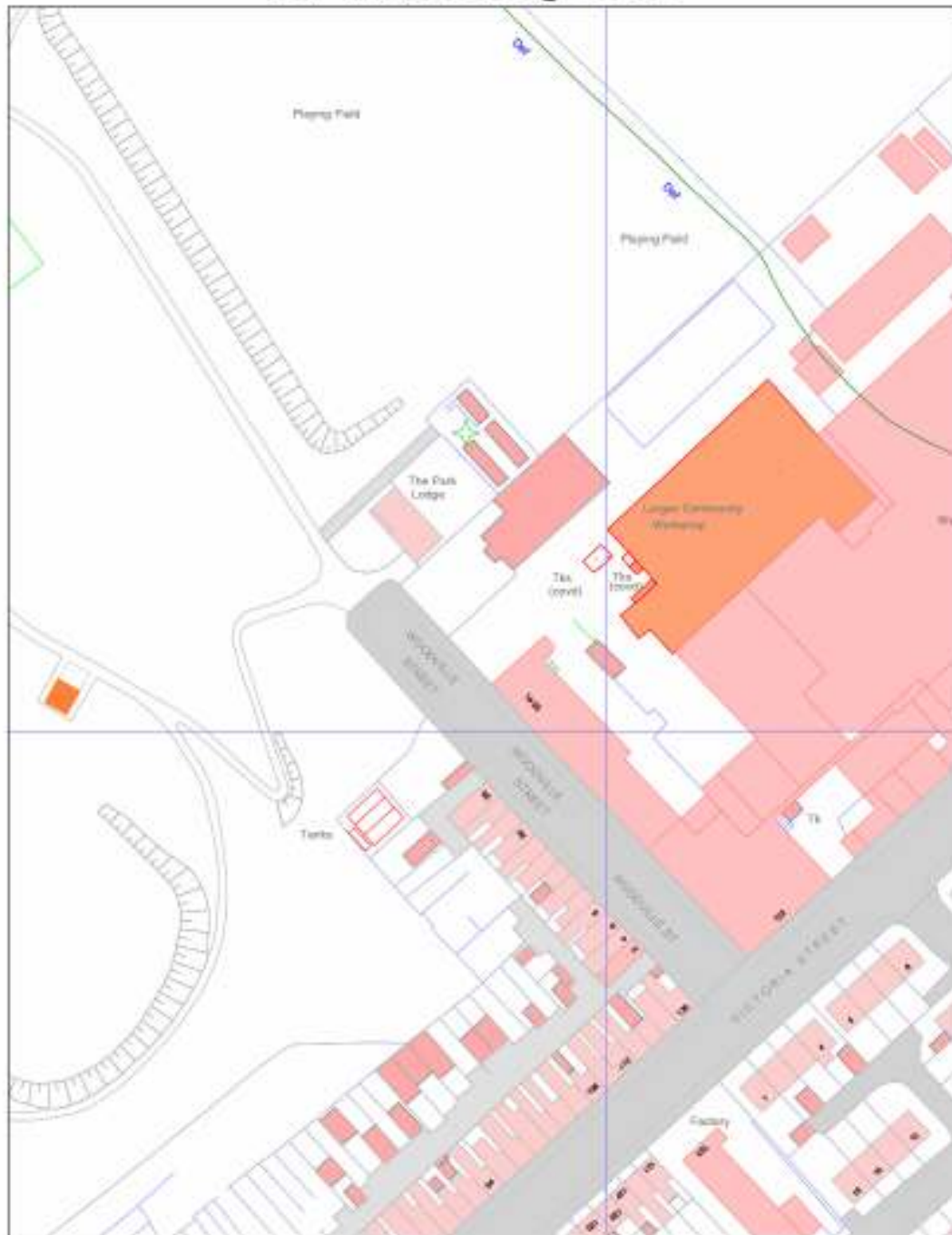
★ Town Hall, Union Street, Lurgan  
Nitrogen Dioxide  
Tube No. 82760



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# Air Monitoring Sites



Date: 13/05/2009 Scale: 1:1250



Lord Lurgan Park, Lurgan  
Nitrogen Dioxide  
Tube No. 82766



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# Air Monitoring Sites



Date: 13/05/2009 Scale: 1:1250



★ Castle Lane, Lurgan  
Nitrogen Dioxide  
Tube No. 82765



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# Air Monitoring Sites



Date: 13/05/2009 Scale: 1:1250



4 Cluandara, Derrymacash, Lugan  
Nitrogen Dioxide  
Tube No. 82767



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### Air Monitoring Site



Date: 13/05/2009 Scale: 1:1250



Ashgrove Community Centre, Portadown  
Nitrogen Dioxide  
Diffusion Tube No. 82764



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# Air Monitoring Sites



Date: 13/05/2009 Scale: 1:1250



36 Ardboe Drive, Lurgan  
Nitrogen Dioxide  
Tube No. 82762



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# Air Monitoring Sites



Date: 13/05/2009 Scale: 1:1250



16 West Street, Portadown  
Nitrogen Dioxide  
Tube No. 82979



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